



THE ANALYSIS OF ELECTRONIC COMMERCE IN THE SPSS SOFTWARE PACKAGE VERSION 26

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Abstract:

Digital economy is a term used in the new sphere of business and management. The subject of research in this paper is the development of trade in the newly created conditions of digitization and the examination of users' perception and experience of the use of the e-stores. It is known that contemporary trade is increasingly offered via (over) the Internet, and to succeed on the e-market it is necessary to raise consumer's awareness of new opportunities that are available on the global network. There have been major changes in the way of running business and performing management, in such a way that electronic commerce is becoming a standard. It can be stated that e-commerce is also the beginning of the digital revolution, which cannot evolve without a scientific and technological process and progress. Based on the research subject selected, the aim of this study is to analyse the level of awareness of consumers of digital trade in Serbia and user's experience. The expected results of this study are to gain viable information on how well the digital commerce performs. This study also indicates the possible ways to improve electronic commerce based on the user impressions and opinions.

Keywords:

Digital Economy, E-commerce, Internet, SPSS, User Experience.

INTRODUCTION

The development of the Internet, as well as the use of information and communication technologies (ICTs) in the business and management of the companies from various industries or fields, is becoming a new business direction. The digital economy exhibits steady growth and the assumptions are justified that running the business of will shift from the traditional form towards an electronic, digitized, contemporary one. Based on the digital economy in (under) these conditions, the principle of business lies in the functioning of trade, which also belongs to the group of economic operations.

The development of information technologies (IT) has caused transformation in different business sectors for the most companies, especially in trade, to become digital. Nowadays, many companies operate also outside the local market, that is, they expand their business to the international level, so the need for digital communication has become a necessity.



Trade is one of the oldest economic activities and is therefore the most susceptible to the introduction of innovations [1]. So further development of IT enabled the traditional form of business to be brought closer to the customers with the implementation of software and electronic systems. Historically, the application of Informatics and technology has enabled a wide range of services that digital commerce provides. Electronic commerce in its further development was enabled with the development of satellite and cable television, Micro-electronics, as well as the application of Information and Telecommunication systems (IS and TCS, respectively). All was enhanced and conditioned by the development of the Internet, which enabled the creation of a new type of commerce. The process of digitization has provided the development of virtual commerce, click-to-purchases, and the transfer of funds and payments in the shortest possible time, all of which are the embodiment of the amenities as well as problems of modern society.

According to data from the Statistical Office of the Republic of Serbia from the year 2023, a 100% of companies use Internet and all 100% of companies use broadband Internet connection, while 82.4% of small and medium-sized enterprises own a website and 37% of companies pay for cloud services via the Internet [2]. In 2022, 28.2% of businesses sold and offered their goods, products and services online, using the Internet [3]. In the Republic of Serbia, during 2023, over 91% (i.e. 91.3% according to [3]) of people were accessing the Internet several times per day. In the year 2023 as well 26.4% of the Internet using population accessed the Internet to obtain and print official forms from the website or mobile application provided by public administration (using E-government services) [3]. During 2023, 51.0% of Internet users either ordered or bought goods or services online [3]. In 2023, 85.6% of households in the Republic of Serbia own an internet access. The number of the Internet connected households and enterprises is the highest in Belgrade and it amounts to 93.1%. In Vojvodina Internet access is 84.6%, in Šumadija and Western Serbia 83.3%, while in Southern and Eastern Serbia it is 80.3% [3, 4, 5]. Electronic business is a process that is provided by the help of a computer network and it refers to a broader concept than electronic commerce. Electronic banking is only one area or example of electronic business [6]. New digital technologies allow sellers to enter the market with the help of an electronic online platform and thus move their business and operation outside of their branches, offices, shops or warehouses to enter the premise locations of clients [7]. In [8] was pointed out that the use of the Internet in the Republic

of Serbia is growing more intensively, and that the domestic market has good initial characteristics for a successful implementation of online services.

2. DIGITAL ECONOMY AS A PHENOMENON OF MODERN SOCIETY

Chronologically, the process of globalization took place in several phases or stages. With the development and application of innovative technology, the nature of the globalization process is also changing and evolving. Informatics and Electronics have successfully modified the traditional into contemporary drivers of globalization processes. The expansion of the Internet at the end of the 20th century encourages the development of electronic business. At the same time, the nature of competition on the world market is also changing [9]. In order to promote a new type of business, the marketing instrumentation of the novelty that brings with it Information and Communication Technologies stands out in the foreground. The very concept of digital commerce was recorded in 2005, due to the increasing commercial use of websites for social networking and numerous other media [10]. According to [11] by Wang and Zhang, it is defined as commerce that includes the use of social media that support social interactions and assist in the activities of buying as well as selling, products and services online and over Internet and offline or within Intranet [11]. In the contemporary literature available, one can often find the following terms used as synonyms: "new economy", "Internet economy", "network economy", "digital economy", "knowledge economy". All these names are used to indicate the new era of post-industrial society. These are the terms that signify and separate the "old economy", (economy driven by resources), and the "new economy", (economy driven by knowledge and information) [12]. The digital economy permeates all aspects of the global economy: trade, transportation, education, healthcare, banking, insurance, etc.

The term digital economy also refers to the convergence of computer and communication technologies with the use of the Internet and variety of networks, as well as the flow of information and technologies that encourage e-commerce and huge organizational changes [13]. In the author's research and from a review of the economic literature given in [14], it is learned of the effects that the digital revolution had on the labour market. In [14] is described how the digital revolution, which consists of the latest technological trends such as robotics, industry 4.0, artificial intelligence and the



development of digital platforms, is and are of great importance for some professions [14]. In the "new" economy, digital networks and communication infrastructure provide a global platform where people and organizations communicate, collaborate and browse for information. Theory and practice agree that the digital economy is characterized by the following elements [13]: numerous digitized products (books, magazines, databases, information, electronic games and software) are delivered via digital infrastructure and being available at any time, from anywhere and to any place in the world, interconnected over the global network. Financial transactions are now digitized and chips are embedded in many products (e.g. credit or debit cards, cameras, cars). Business processes and workplaces are organized on a new and innovative digital web platforms. A kind of innovative reengineering is taking place in many industries. According to a 2013 Stadd survey of over 6,000 respondents over a 17-month period focusing on social commerce on Facebook, Twitter (then, nowadays X), and Pinterest, social networks generated roughly equal amounts of online and in-store sales. Nearly 4 out of 10 Facebook users have stated that at some point liking, sharing, or commenting had led to a purchase and that 43% of social media users had purchased a product after sharing or liking it on Pinterest, Facebook, or Twitter [15]. Information model or I-model by Zhang & Benjamin [11] defined a social development of commerce through four aspects making an impact [11]: people or human resources, management, technology and information. From [8] can be observed that activation of Electronic Commerce (EC) was attempted in 2005, i.e. that EC has emerged, which is becoming recognizable, where users get advice about a product, exchange experiences with each other, and companies use it to adopt a development strategy because that's the only way they can reach customers.

The combination of the above indicates the beginning of the development of electronic commerce. Since the year 2011. customers are slowly being redirected to E-bay, Facebook and other social networks that are still in use today, following the perpetual development of technologies and ways to achieve the goals of clients and high quality of service. The term "online shopping" refers to shopping through social networks such as Facebook, TikTok, Instagram, or from Internet browsers, and one should not ignore existing blogs and websites that offer the information on demand when needed.

3. THE SAMPLE OF SURVEYED RESPONDENTS

A survey was conducted on a group of patients and the results are presented in Table 1. The 105 respondents – patients have participated in the research, 50 of which were male and 55 were female, as shown in Table 1. The youngest respondent is 18 years old, while the oldest respondent is 74 years old ($M = 36.50$, $SD = 15.53$). Almost half of the respondents have completed high school (45.7%), (Table 1). The following largest group are respondents who have completed PhD studies (33.3%). Most of the respondents are married (42.9%), followed by respondents who are single (23.8%) (Table 1). The vast majority of respondents are employed (80%), while the number of respondents in the other groups regarding employability is small. The most respondents have incomes over 90,001 dinars per month (35.2%), while the smallest number of respondents have incomes up to 40,000 dinars (3.8%). More than half of the respondents are from Belgrade and its surroundings (58.1%) (Table 1).

**Table 1.** A sociodemographic characteristics of patients – survey participants.

Category	Classes per category	Frequency per class	Percentage [%]
Gender	Male	50	47.6
	Female	55	52.4
Level of Education / Vocational degree	Secondary school (ISCED Level 2 or 3)	48	45.7
	Higher education of Bachelor level	20	19.0
	Master HE or Magisterium	2	1.9
	Doctorate	35	33.3
Marital status	Married	45	42.9
	Divorced	13	12.4
	A cohabiting couple (a domestic partnership)	20	19.0
	Single	25	23.8
	Widowed	2	1.9
Employment status	Employed	84	80.0
	Unemployed	6	5.7
	Student	7	6.7
	High School Student	1	1.0
	Entrepreneur	2	1.9
	Pensioner / Retired	5	4.8
Amount of monthly salary/ income	Less than 40,000 RS dinars	4	3.8
	From 40,001 to 65,000 RS dinars	25	23.8
	From 65,001 to 90,000 RS dinars	22	21.0
	More than 90,001 RS dinars	37	35.2
	"I don't want to say"	17	16.2
The region where the respondent lives	City of Belgrade with all Municipalities	61	58.1
	Vojvodina	13	12.4
	Šumadija and Western Serbia	9	8.6
	Southern and Eastern Serbia	22	21.0

4. THE RESEARCH RESULTS

The authors examined how often respondents visit online stores, and based on the results shown in Table 2, it can be concluded that the largest number visits online stores once a week (37.1%) and once a day (32.4%), while the least are respondents who visit online stores once in three months (3.8%). The largest number of respondents buy clothes and shoes online (26.15%), followed by various goods and appliances for households (11.93%) and books (11.47%), while the least is the number of those who buy video games and movies (1.83%) (Figure 1).

Table 3 shows answers to several questions regarding online purchase of products and services. When deciding whether to buy an item from an online store, the most important information to the respondents is affordability or price (41.9%) followed by the product quality (32.4%), while the least important to them is the loyalty program (6.7%) and promotional products (7.6%) (Table 3).

The vast majority of respondents pay for purchased products online by cash on delivery (74.3%) and do not feel safe giving personal information (55.2%) (Table 3).

Respondents are motivated to shop online mostly due to time saving (21.97%), shopping or the chance to buy from the comfort of their home (17.94%) and better availability of shopping - from 0-24 h (16.59%) (Figure 2).



Table 2. Examples of positive and negative framing, and their corresponding certain and risky choices.

Answers offered in survey	Frequency	Percentage [%]
Once a day	34	32.4
Once a week	39	37.1
Once a month	18	17.1
Once in three months	4	3.8
Rarely	10	9.5
Total	105	100

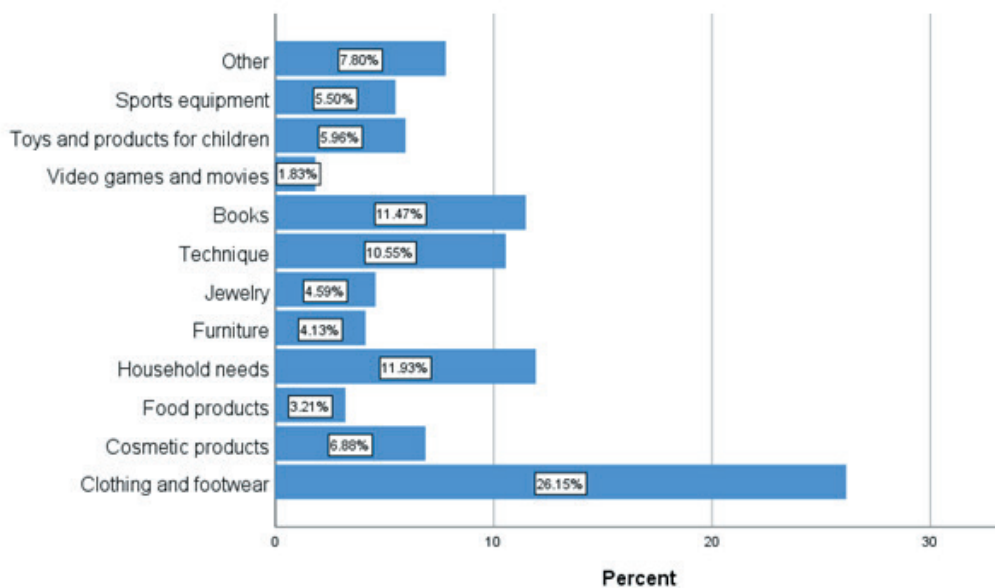


Figure 1. Answers given to question “What do you most often buy in online stores?”.

Table 3. Online purchase of products and services.

Questions asked in survey	Answers offered in survey	Frequency per answers	Percentage [%]
What is important to you when you shop online?	Affordable price	44	41.9
	Delivery free of charge	12	11.4
	Promotional products	8	7.6
	Loyalty program	7	6.7
	High product quality	34	32.4
What type of payment do you use for online shopping?	Payment by cash on delivery	78	74.3
	Banking transactions	4	3.8
	Credit or debit card	23	21.9
Do you believe or feel that providing personal information is safe?	Yes	47	44.8
	No	58	55.2



Most of the respondents sometimes or occasionally inform their family and friends about current offers (46.7%), or they like that they always get a product identical to the one in the picture (37.1%), sometimes they think that online shopping is more profitable than traditional stores (47.6%) and they are and are not satisfied with the range of products offered by small and medium enterprises (40%) (Table 4).

Based on the results shown in Table 5, it can be concluded that the vast majority will continue shopping online (53.3%) or will absolutely continue shopping online (32.4%) (Table 5).

Almost half of respondents are satisfied with purchase factors (47.62%), while 30.48% of respondents are neither satisfied nor dissatisfied with purchase factors (Figure 3).



Figure 2. Answers given to question “What have motivated you to shop online?”.

Table 4. Segments of online product purchases.

Questions asked in survey	Answers offered in survey	Frequency per answers	Percentage [%]
Do you inform family and friends about current offers?	I do, always	19	18.1
	Sometimes	49	46.7
	Occasionally / Rarely	23	21.9
	Not	13	12.4
	Absolutely never	1	1.0
Do products received look identical to the one shown in the picture?	They do, always	39	37.1
	Sometimes	31	29.5
	Occasionally / Rarely / I get it and I don't	30	28.6
	I'm not sure	3	2.9
	Absolutely never	2	1.9
Do you think that shopping online is more affordable / profitable than in traditional stores?	I do, always	18	17.1
	Sometimes	50	47.6
	Yes and no	24	22.9
	I'm not sure	9	8.6
	Absolutely not	4	3.8
Are you satisfied with the products offered / offered assortment of small and medium enterprises?	I am, always	17	16.2
	Sometimes	39	37.1
	Yes and no	42	40.0
	No, I am not	5	4.8
	Absolutely not	2	1.9



Table 5. A frequency of recurrent shopping from online stores.

Answers offered in survey	Frequency	Percentage [%]
Absolutely yes	34	32.4
Yes	56	53.3
Yes and no	12	11.4
Not / No	2	1.9
Absolutely no	1	1.0
In Total	105	100

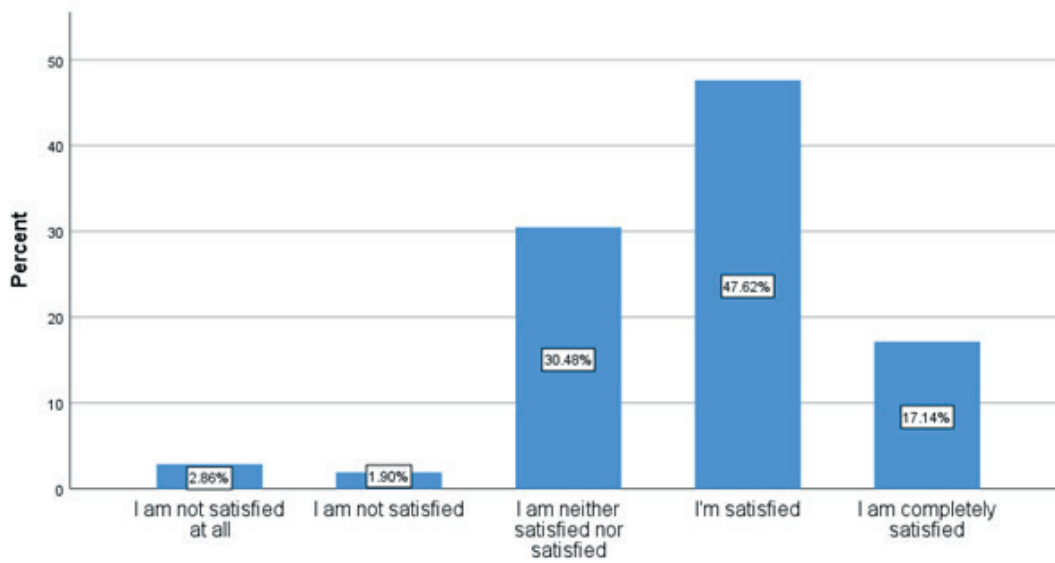


Figure 3. How much is buyer / survey respondent satisfied with the purchase factors.

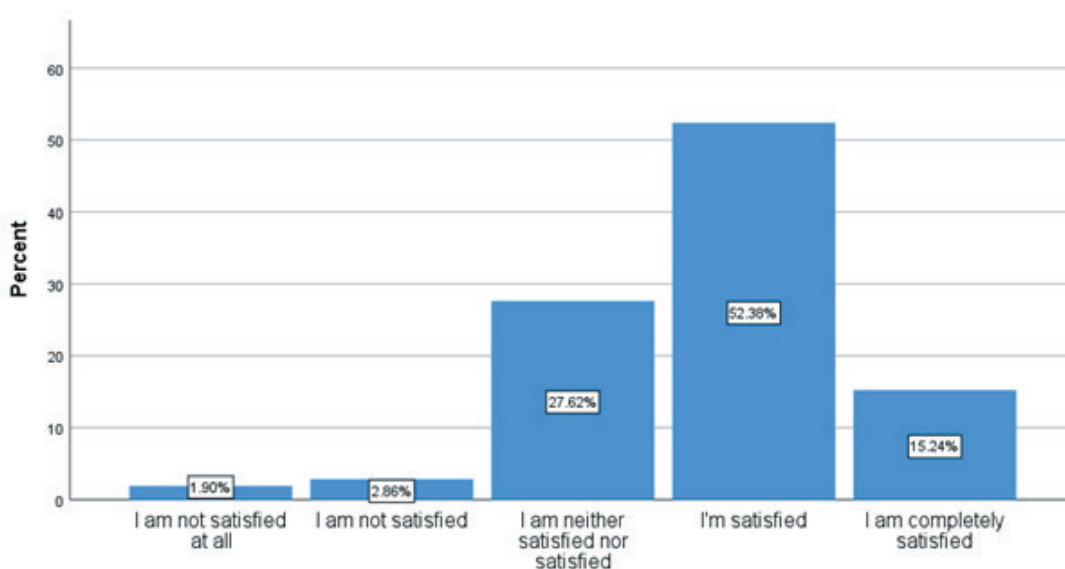


Figure 4. A Level of satisfaction of a buyer / survey respondent with shopping elements.



More than half of the respondents are satisfied with the shopping elements (52.38%), while 27.62% of the respondents are neither satisfied nor dissatisfied with the shopping elements (Figure 4).

5. CONCLUSION

The development of Internet, IT, new technologies, web platforms, etc. enabled e-commerce and commerce on social networks and opened up new opportunities for the strengthening of electronic business. Technological progress in the field of Informatics, Artificial Intelligence, Robotics and overall Automation of numerous processes, made the digital economy possible as well as intertwined with these. Managers acquire new knowledge that is needed for the new, automated and digitized era. Artificial intelligence and robots are replacing the traditional concept of business fueling the new concept of digital enterprise. The process of digitization is based on insights from examples of good practice from the European Union, as well as from Serbia. In the research conducted by the authors, it was found out that online stores are visited and used once a week or even daily. Clothes or shoes are most often bought via the web platforms (e.g. Limundo, Kupindo, Kupujem-prodajem).

A more affordable price is the primary reason for online purchase. The preferable way of payment is by cash on delivery. It is necessary to provide a contactless payment for courier services on the point of delivery (some already have). It is of utmost importance that sellers and retailers provide the safety and security to their consumers while shopping online. Consumers are still not completely satisfied with the Internet offer provided locally by small and medium-sized enterprises. This information is important for entrepreneurs. In general, consumers are satisfied with the purchase factors. However, sellers and retailers have to monitor and respond to wishes and needs of their digital consumers. This kind of research can be carried out periodically, to gain insights regarding development of digital trade and impact of IT and Electronics on it (e.g. automated self-service cash-tills). It could be of interest to investigate the attitudes and experience of entrepreneurs in online retail and trade.

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